

# Project Mapping - Project Report - Physics (2019-2020)



**ARULMIGU PALANIANDAVAR COLLEGE OF ARTS AND CULTURE**

(Reaccredited with "A" Grade by NAAC)

Run by Arulmigu Pandalayuthapani Swamy Thirukkoli, H.R & C.E Dept. Government of Tamilnadu

A Government Aided College - Affiliated to Madurai Kamaraj University, Madurai

Dindigul Road, Palani - 624601



## I.3 CURRICULUM ENRICHMENT - SUPPORTIVE DOCUMENTS

DEPARTMENT: PHYSICS

CLASS: II M.Sc.

YEAR: 2019-2020

S.No.	UNIVERSITY REG. No.	NAME OF THE STUDENT	NAME OF THE PROJECT GUIDE	TITLE OF THE PROJECT
1	B8E16601	KALAISELVI. G	Dr. M. RAMESH BABU	SYNTHESIS AND CHARACTERIZATION OF Co DOPED SnO <sub>2</sub> NANOPARTICLES
2	B8E16602	NIVETHA. M	Dr. P. KOKILA	STRUCTURAL ANALYTIC SURVEY OF TiO <sub>2</sub> THIN FILMS
3	B8E16604	SIVAPRIYA. S	Dr. M. SUBHA	SPECTRAL AND OPTICAL STUDIES OF 3-HYDROXY PYRIDINIUM SALICYLATE SINGLE CRYSTAL
4	B8E16605	THIRBIKA. S	Dr. K. PAKIYARAJ	TRIGGERING OF SOLAR FLARE DUE TO GROWTH OF SUNSPOTS
5	B8E16606	VASANTHAKUMARI. N	Mrs. S. ANITHA	ANTIBACTERIAL, MORPHOLOGICAL AND OPTICAL STUDIES OF ZnO NANOPARTICLES WITH TRIDAX PROCUMBES LEAF EXTRACT
6	B8E16607	VASANTHI. S	Dr. K. KULATHURAN	GREEN SYNTHESIS, STRUCTURAL AND OPTICAL PROPERTIES OF Cu-NANOPARTICLES DERIVED FROM LAWASONIA INERMIS
7	B8E16608	VIJAYASANTHI. R	Dr. R. PREMILA	GREEN SYNTHESIS AND INVESTIGATION OF STRUCTURE AND ANTIBACTERIAL ACTIVITIES OF ZnO NANOPARTICLES USING TRIDAX PROCUMBES LEAF EXTRACT
8	B8E16609	ARUN. S	Mrs. S. ANITHA	ANTIBACTERIAL, MORPHOLOGICAL AND OPTICAL STUDIES OF ZnO NANOPARTICLES WITH TRIDAX PROCUMBES LEAF EXTRACT
9	B8E16610	KARTHIKEYAN. K	Dr. K. KULATHURAN	DETERMINATION OF THE THICKNESS AND OPTICAL CONSTANTS OF PVP TREATED WITH POROUS SILICON THIN FILM BY THE ENVELOP METHOD
10	B8E16611	MARIMUTHU. B	Dr. P. KOKILA	STUDIES ON SOLAR DIFFERENTIAL ROTATION BY USING SUNSPOT METHOD:
11	B8E16612	PAVALARATHINARASU. T	Dr. K. PAKIYARAJ	SELF DRIVING VEHICLE USING NEURAL NETWORK
12	B8E16613	SIVA. P	Dr. R. PREMILA	GREEN SYNTHESIS AND INVESTIGATION OF STRUCTURE AND ANTIBACTERIAL ACTIVITIES OF ZnO NANOPARTICLES USING TRIDAX PROCUMBES LEAF EXTRACT

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13	B8E16614	SIVAMANI. P	Dr. M. SUBHA	SPECTRAL AND OPTICAL STUDIES OF 3-HYDROXY PYRIDINIUM SALICYLATE SINGLE CRYSTAL
14	B8E16615	SURYA. S	Dr. M. RAMESH BABU	SYNTHESIS AND CHARACTERIZATION OF Co DOPED SnO <sub>2</sub> NANOPARTICLES
15	B8E16616	VIJAY. P	Dr. P. KOKILA	STRUCTURAL ANALYTIC SURVEY OF TiO <sub>2</sub> THIN FILMS

  
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# PG - PROJECT REPORT-(2019 – 2020) - BATCH

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MADRAS 24.01.2019*

**APPENDIX - C1**  
**MADURAI KAMARAJ UNIVERSITY**  
(University with Potential for Excellence)  
**B.Sc. Physics (Semester)**  
**REVISED SYLLABUS**  
(Revised syllabus with effect from the academic year 2019-2020)

**1. Introduction of the Programme**  
The Master of Science in Physics is a 2½ year programme spread over 2 semesters to be divided into 8 semesters. The programme of study shall consist of 6 core papers which are compulsory, 2 elective papers and 4 projects. Each of these carries 80 marks. It has been designed to provide students the opportunity to be skilled in recent developments in Physics. The course is designed to equip the students a rigorous training in Physics both in theory and experiments. The approach is a comprehensive one. It is believed that such programme both new to our and others, questions. This programme has been designed to acquire students' knowledge in Physics in contemporary and advanced problems. At the end of the course, students are expected to have state-of-the-art exposure in the related fields.

**2. Eligibility for Admission**  
B.Sc. Degree Applied Physics with Mathematics as auxiliary subject and candidate who studied Physics / Mathematics at 2 level are eligible for seeking admission to M.Sc. Physics. Candidates belonging to general category should have secured at least 50 % of marks. OBC candidates must have secured 30 % of marks and SC / ST / Candidates with disability must have passed in the qualifying examination for admission, as prescribed by Government of Tamil Nadu / Madras State University.

**3. Duration of the programme** - 2 Years (4 Semesters)  
**4. Medium of Instruction of the programme** - English

**5. Objectives of the Programme**

- \* To offer knowledge, skills and training and ability to PG students
- \* To improve the employability of the students
- \* To improve the employability of the students
- \* To develop their communication, critical thinking skills, team working and writing abilities

**4. Outcome of the Programme**

- It serves as a basis to build a purely academic profile for further studies and research in Physics such as M.Phil and Ph.D.
- On successful completion of this course, one can apply for the UGC-NET or JRF exam. The success in these exams makes teaching or research as good options.
- The degree holders can opt for further higher studies and career in various specializations of Physics such as in Medical Physics, Nano Physics and Particle Physics.

**5. Core Subject Papers**  
Core Subject papers shall consist of 12 papers as listed below.

1. Mathematical Physics I
2. Mathematical Physics II
3. Solid State Physics I
4. Solid State Physics II
5. Quantum Mechanics I
6. Quantum Mechanics II
7. Classical Mechanics
8. Statistical Mechanics and Thermodynamics
9. Nuclear and Particle Physics
10. Electromagnetic Theory
11. Applied Electronics
12. Molecular Spectroscopy

**6. Subject Elective Papers**  
Elective Papers shall consist of 4 papers as listed below.

1. (a) Computer Oriented Numerical Methods / (b) Computer programming in C++
2. (a) Nano Physics / (b) Introduction to Particle Physics / (c) Medical Physics
3. (a) Project / (b) Applied optics and Laser Physics / (c) Opto Electronics

**7. Non Major Electives**

1. (a) Non-Conventional Energy Sources / (b) Introduction to Nanotechnology

**KALAISELVI. G**  
**B8E16601**

**UNDER THE GUIDANCE OF**  
**Dr. M. RAMESH BABU**

**APRIL - 2020**  
**CERTIFICATE**

This is to certify that the dissertation entitled "**SYNTHESIS AND CHARACTERIZATION OF CO DOPED SNO<sub>2</sub> NANOPARTICLES**", is a Bonafide record of the original research work done by **G.KALAISELVI (REG NO: B8E16601)** and **S.SURYA (REG NO: B8E16615)** during the Academic year July 2019 to April 2020 of his study in the Department of Physics, Arulmigu Palaniandavar College of Arts and Culture, Palani, under my guidance and the project work has not formed the basis for the award of any **Degree/ Diploma/ Associateship/ Fellowship** of similar title to any candidate of any University.

Place: Palani  
Date: 14.9.2020

*[Signature]*  
Head of the Department

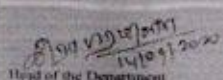
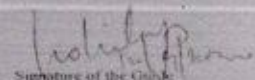
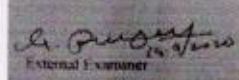
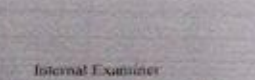

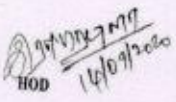
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<p>2</p>	<p>NIVETHA. M B8E16602</p> <p>UNDER THE GUIDANCE OF Dr. P. KOKILA</p>	<p style="text-align: center;"><b>CERTIFICATE</b></p> <p>This is to certify that the dissertation entitled "Structural Analytic survey of TiO<sub>2</sub> Thin Films" is a bonafide record of the original research work done by Miss. M. Nivetha (Reg. no: B8E16602) during the academic year July 2018 to April 2020 of study in the Department of Physics, Arulmigu Palaniandavar College of Arts and Culture, Palani, under my guidance and the project work has not formed the basis for the award of any Degree/Diploma/Associateship/Fellowship of similar title to any candidate of any university.</p> <p>Place: Palani Date: 14.09.20</p> <p style="text-align: center;">         Head of the Department     </p> <p style="text-align: center;">         Signature of the Guide     </p> <p style="text-align: center;">         External Examiner     </p> <p style="text-align: center;">         Internal Examiner     </p>
<p>3</p>	<p>SIVAPRIYA. S B8E16604</p> <p>UNDER THE GUIDANCE OF Dr. M. SUBHA</p>	<p style="text-align: center;"><b>CERTIFICATE</b></p> <p>This is to certify that this dissertation entitled "SPECTRAL AND OPTICAL STUDIES OF 3-HYDROXY PYRIDINIUM SALICYLATE" submitted in partial fulfillment of the requirement for the degree of Master of science in Physics is a bonafide work done by P.SIVAMANI ,S.SIVAPRIYA under my guidance at department of physics, Arulmigu Palaniandavar College of Arts and Culture, Palani during the academic year 2019-2020.</p> <p>Place : Palani Date : 14.09.2020</p> <p style="text-align: center;">         (M. SUBHA)     </p> <p style="text-align: center;">         HOD     </p>

  
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<p>4</p>	<p><b>THIRBIKA. S</b> <b>B8E16605</b></p> <p><b>UNDER THE GUIDANCE OF</b> <b>Lt.Dr. K. PAKIYARAJ</b></p>	<p style="text-align: center;"><b>CERTIFICATE</b></p> <p>This is to certify that the dissertation entitled "TRIGGERING OF SOLAR PLASMA DUE TO GROWTH OF SUNSPOTS" is a bonafide source of the original research work done by Ms. S. THIRBIKA, Reg. no. B8E16605 during the academic year August 2018 to April 2020 of her study in the Department of Physics, Arulmigu Palaniandavar College of Arts and Culture, Palani, under the guidance and the project work has not formed the basis for the award of any degree/ diploma/ certificate/ any fellowship of similar title in any outside of any university.</p> <p>Place: Palani Date: 14/09/2020</p> <p style="text-align: right;"><i>[Signature]</i> Internal Examiner 14/09/2020</p> <p style="text-align: center;"><i>[Signature]</i> External examiner 14/09/2020</p> <p style="text-align: right;"><i>[Signature]</i> Head of the Department 14/09/2020</p>
<p>5</p>	<p><b>VASANTHAKUMARI. N</b> <b>B8E16606</b></p> <p><b>UNDER THE GUIDANCE OF</b> <b>Mrs. S. ANITHA</b></p>	<p style="text-align: center;"><b>CERTIFICATE</b></p> <p>It is certified that the project report entitled "GREEN SYNTHESIS AND INVESTIGATION OF STRUCTURE AND ANTI-BACTERIAL ACTIVITIES OF ZINC NANOPARTICLES USING TRIDAX PROCUDENS LEAF EXTRACT" is a bonafide work done by VASANTHAKUMARI (B8E16606) (A ART20180016606), B. Sc. Physics, Department of Physics, Arulmigu Palaniandavar College of Arts and Culture and submitted for the partial fulfillment of degree in Science of Physics in the Mahabali Kamman Kalasala, under my supervision and guidance during the academic year 2019-2020.</p> <p>This dissertation is an original work of the candidate and to the best of my knowledge has not been presented or part or in full for any diploma, degree, certificate, fellowship or other award in this or any other university. No portion of the dissertation is a reproduction from any other source, published or unpublished without author's consent.</p> <p style="text-align: right;"><i>[Signature]</i> Internal Examiner</p> <p style="text-align: center;"><i>[Signature]</i> External Examiner</p> <p style="text-align: right;"><i>[Signature]</i> HEAD OF THE DEPARTMENT</p>

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<p>6</p>	<p>VASANTHI. S B8E16607</p> <p>UNDER THE GUIDANCE OF Dr. K. KULATHURAAAN</p>	<p>Dr. K. KULATHURAAAN Assistant Professor Department of Physics Arulmigu Palaniandavar College of Arts and Culture Palani - 624 601.</p> <p><b>CERTIFICATE</b></p> <p>This is to certify that the dissertation entitled "GREEN SYNTHESIS, STRUCTURAL AND OPTICAL PROPERTIES OF Zn NANOPARTICLES DERIVED FROM LAWSONIA INERMIS" is finished work done by VASANTHI S. (B8E 16607), Department of Physics, Arulmigu Palaniandavar College of Arts and Culture, Palani - 624 601, and submitted for the partial fulfillment of degree of Master of Science in Physics to the Alagappa University, Madurai, under my supervision and guidance during the academic year 2019-2020.</p> <p>This dissertation is an original work of the candidate and to the best of my knowledge has not been submitted in part or in full, for any diploma, degree, associate ship, fellowship or other similar work in this or any other university. No portion of the dissertation is a reproduction from any other source, published or unpublished without acknowledgement.</p> <p>Date: 22/08/2020 Place: Palani</p> <p><i>[Signature]</i> INTERNAL EXAMINER</p> <p><i>[Signature]</i> HEAD OF THE DEPARTMENT</p> <p><i>[Signature]</i> EXTERNAL EXAMINER</p>
<p>7</p>	<p>VIJAYASANTHI. R B8E16608</p> <p>UNDER THE GUIDANCE OF Dr. R. PREMILA</p>	<p><b>CERTIFICATE</b></p> <p>This is to certify that the project report entitled "GREEN SYNTHESIS AND INVESTIGATION OF STRUCTURE AND ANTIBACTERIAL ACTIVITIES OF ZnO NANOPARTICLES USING TRIDAX PROCBMBENS LEAF EXTRACT" is a finished work done by VIJAYASANTHI (B8E16608) and DIVAINDRE(663), B. M. Sc. Department of Physics, Arulmigu Palaniandavar College of Arts and Culture and submitted for the partial fulfillment of degree of Master of Science in Physics to the Alagappa University, under my supervision and guidance during the academic year 2019-2020.</p> <p>This dissertation is an original work of the candidate and to the best of my knowledge has not been submitted in part or in full for any diploma, degree, associate ship, fellowship or other similar work in this or any other university. No portion of the dissertation is a reproduction from any other source, published or unpublished without acknowledgement.</p> <p>Date: 18/09/2020 Place: Palani</p> <p><i>[Signature]</i> GUIDE</p> <p><i>[Signature]</i> EXTERNAL EXAMINER</p> <p><i>[Signature]</i> HEAD OF THE DEPARTMENT</p>

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<p>8</p>	<p><b>ARUN. S</b> <b>B8E16609</b></p> <p><b>UNDER THE GUIDANCE OF</b> <b>Mrs. S. ANITHA</b></p>	<p>Page No: 1001</p> <p><b>CERTIFICATE</b></p> <p>This is to certify that the project report entitled "GREEN SYNTHESIS AND INVESTIGATION OF STRUCTURE AND ANTIBACTERIAL ACTIVITIES OF ZnO NANOPARTICLES USING TRIDAX FRUCOSIBERS LEAF EXTRACT" is a finished work done by <b>MAHANTHANGAMARUDRAN (B8E16609)</b> and <b>ATIJARINI (B8E16609)</b>, II M.Sc. Physics, Department of Physics, Arulmigu Palaniandavar College of Arts and Culture and submitted for the partial fulfillment of degree of Master of Science in Physics to the Madurai Kamraj University, under my supervision and guidance during the academic year 2019-2020.</p> <p>This dissertation is an original work of the candidate and to the best of my knowledge has not been submitted in part or in full for any diploma, degree, associate ship, fellowship or other award in this or any other university. The portion of the dissertation is a reproduction from any source, published or unpublished without acknowledgement.</p> <p>Date: 11/01/2020</p> <p><i>(Signature)</i> Mrs. S. Anitha Head of the Department</p>
<p>9</p>	<p><b>KARTHIKEYAN. K</b> <b>B8E16610</b></p> <p><b>UNDER THE GUIDANCE OF</b> <b>Dr. K. KULATHURAN</b></p>	<p><b>Dr. K. KULATHURAN</b> Assistant Professor Department of Physics, Arulmigu Palaniandavar College of Arts and Culture, Palani - 624 601.</p> <p><b>CERTIFICATE</b></p> <p>This is to certify that the dissertation entitled "DETERMINATION OF THE THICKNESS AND OPTICAL CONSTANTS OF PVP TREATED AIEBO FORGUS SPORES THIN FILM BY THE ENVELOPE METHOD" is finished work done by <b>KARTHIKEYAN K. (Reg. No. B8E16610)</b>, Department of Physics, Arulmigu Palaniandavar College of Arts and Culture, Palani - 624 601 and submitted for the partial fulfillment of degree of Master of Science in Physics to the Madurai Kamraj University, Madurai, under my supervision and guidance during the academic year 2019-2020.</p> <p>This dissertation is an original work of the candidate and to the best of my knowledge has not been submitted in part or in full for any diploma, degree, associate ship, fellowship or other award in this or any other university. The portion of the dissertation is a reproduction from any other source, published or unpublished without acknowledgement.</p> <p>Date: Palani Date: 11/01/2020</p> <p><i>(Signature)</i> Dr. K. Kulathuran Head of the Department</p> <p><i>(Signature)</i> External Examiner</p>

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<p>10</p>	<p>MARIMUTHU. B B8E16611</p> <p>UNDER THE GUIDANCE OF Dr. P. KOKILA</p>	<p style="text-align: center;">CERTIFICATE</p> <p>This is to certify that the dissertation entitled "STUDIES ON SOLAR DIFFERENTIAL ROTATION BY USING SUNSPOT METHOD" is a bonafide record of the original research work done by Mr. B. MARIMUTHU (Reg. No. B8E16611) during the academic year August 2018 to April 2020 of his study in the department of physics, Arulmigu Palaniandavar college of arts and culture, Palani, under my guidance and the project work has not formed the basis for the award of any degree/diploma/associateship/fellowship of similar title to any candidate of any university.</p> <p>Place: Palani Date: 14.09.2020</p> <p style="text-align: right;"><i>P. Kokila</i> Internal guide</p> <p style="text-align: left;"><i>P. Kokila</i> Head Of The Department</p> <p style="text-align: right;">Principal</p>
<p>11</p>	<p>PAVALARATHINARASU. T B8E16612</p> <p>UNDER THE GUIDANCE OF Lt. Dr. K. PAKIYARAJ</p>	<p style="text-align: center;">CERTIFICATE</p> <p>This is to certify that the dissertation entitled "SELF DRIVING VEHICLE USING NEURAL NETWORK" is a bonafide record of the original research work done by Mr. T. PAVALARATHINARASU (Reg. No. B8E16612) during the Academic year July 2018 to April 2020 of his study in the Department of Physics, Arulmigu Palaniandavar College of Arts and Culture Palani under my guidance and the project work has not formed the basis for the award of any Degree /Diploma /Associate ship /Fellow ship of similar title of any candidate of any university.</p> <p>Place: Palani Date: 14.09.2020</p> <p style="text-align: left;"><i>P. Pakiyaraj</i> Head of the department</p> <p style="text-align: right;"><i>P. Pakiyaraj</i> signature of the guide</p>

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<p>12</p>	<p>SIVA. P B8E16613</p> <p>UNDER THE GUIDANCE OF Dr. R. PREMILA</p>	<p style="text-align: center;"><b>CERTIFICATE</b></p> <p>This is to certify that the project report entitled "GREEN SYNTHESIS AND INVESTIGATION OF STRUCTURE AND ANTIBACTERIAL ACTIVITIES OF ZnO NANOPARTICLES USING TRIDAX PROCOUMBENS LEAF EXTRACT" is a bonafide work done by VIJAYASHANTHER (B8E16608) and SIVA.P(B8E16613), B. M. Sc. Physics Department of Physics, Arulmigu Palaniandavar College of Arts and Culture and awarded for the partial fulfillment of degree of Master of Science in Physics to the Madurai Kamaraj University, under my supervision and guidance during the academic year 2019-2020.</p> <p>This dissertation is an original work of the candidate and to the best of my knowledge has not been submitted in part or in full for any diploma, degree, associate ship, fellowship or other similar titles in this or any other university. No portion of the dissertation is a reproduction from any other source, published or unpublished without acknowledgement.</p> <p>Place: Palani <span style="float: right;"><i>[Signature]</i> Guide</span></p> <p>Date: 14.09.2020</p> <p><i>[Signature]</i> 14/9/2020 EXTERNAL EXAMINER <span style="float: right;"><i>[Signature]</i> HEAD OF THE DEPARTMENT</span></p>
<p>13</p>	<p>SIVAMANI. P B8E16614</p> <p>UNDER THE GUIDANCE OF Dr. M. SUBHA</p>	<p style="text-align: center;"><b>CERTIFICATE</b></p> <p>This is to certify that this dissertation entitled "SPECTRAL AND OPTICAL STUDIES OF 3-HYDROXY PYRIDINIUM SALICYLATE" submitted in partial fulfillment of the requirement for the degree of Master of science in Physics is a bonafide work done by P.SIVAMANI ,S.SIVAPRIYA under my guidance at department of physics, Arulmigu Palaniandavar College of Arts and Culture, Palani during the academic year 2019-2020.</p> <p>Place : Palani <span style="float: right;"><i>[Signature]</i> (M. SUBHA)</span></p> <p>Date : 14.09.2020</p> <p><i>[Signature]</i> HOD 14/09/2020</p>

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<p>14</p>	<p>SURYA. S B8E16615</p> <p>UNDER THE GUIDANCE OF Dr. M. RAMESH BABU</p>	<p>APRIL - 2020 <b>CERTIFICATE</b></p> <p>This is to certify that the dissertation entitled <b>SYNTHESIS AND CHARACTERIZATION OF CO-DOPED SNO<sub>2</sub> NANOPARTICLES</b>, is a Bonafide record of the original research work done by <b>G.KALAISELVI (REG NO: B8E16601)</b> and <b>S.SURYA (REG NO: B8E16615)</b> during the Academic year July 2019 to April 2020 of his study in the Department of Physics, Arulmiga Palaniandavar College of Arts and Culture, Palani, under my guidance and the project work has not formed the basis for the award of any <b>Degree/ Diploma/ Associateship/ Fellowship</b> of similar title to any candidate of any University.</p> <p>Place: Palani Date: 14.9.2020</p> <p><i>[Signature]</i> 14/09/2020 Head of the Department</p> <p><i>[Signature]</i> Signature of the Guide</p> <p><i>[Signature]</i> 14/9/2020 External Examiner</p> <p><i>[Signature]</i> Internal Examiner</p>
<p>15</p>	<p>VIJAY. P B8E16616</p> <p>UNDER THE GUIDANCE OF Dr. P. KOKILA</p>	<p><b>CERTIFICATE</b></p> <p>This is to certify that the dissertation entitled <b>Structural Analytic Survey of 100; This Film</b> is a bonafide record of the original research work done by <b>Mr. P. Vijay (Reg no: B8E16616)</b> during the academic year July 2019 to April 2020 of study in the Department of Physics, Arulmiga Palaniandavar College of Arts and Culture, Palani, under my guidance and the project work has not formed the basis for the award of any <b>Degree/Diploma/Associateship/Fellowship</b> of similar title to any candidate of any university.</p> <p>Place: Palani Date: 14.09.20</p> <p><i>[Signature]</i> 14/09/2020 Head of the Department</p> <p><i>[Signature]</i> Signature of the Guide</p> <p><i>[Signature]</i> 14/9/2020 External Examiner</p> <p><i>[Signature]</i> Internal Examiner</p>

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